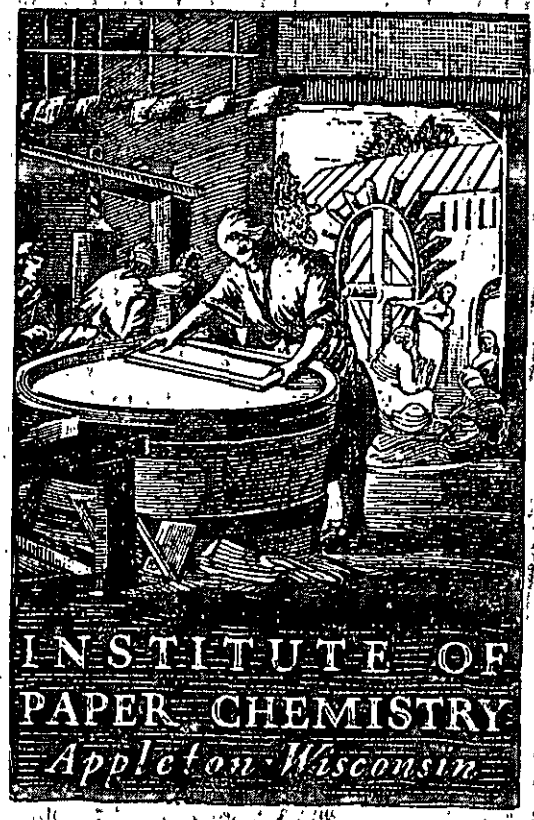

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 145

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

June 1, 1959

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 145

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

June 1, 1959

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THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

PART I: PRESENTATION AND DISCUSSION OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY

In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of May, ninety-four different sample lots of 42-lb. Fourdrinier kraft linerboard from sixteen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from May 1, 1958, to April 30, 1959. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.I.I. index (\%)}$$

TABLE I

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL

Mill Code	Number
A	4
B	0
C	5
D	0
E	0
F	8
G	1
H	2
I	6
J	3
K	8
L	4
M	4
N	10
O	2
P	8
Q	9
S	8
T	12
Total	94

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--MAY 1 THROUGH MAY 31, 1959

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet In Machine	Elmendorf Tear, g./sheet Cross Machine
A	42.8	12.5	113	354	397
B	No samples submitted.				
C	44.4	13.8	108	323	374
D	No samples submitted.				
E	No samples submitted.				
F	44.1	12.5	112	342	390
G	43.1	12.3	108	312	355
H	42.5	13.0	108	338	373
I	43.2	13.0	119	281	340
J	42.4	12.4	107	296	362
K	43.1	11.8	121	324	373
L	44.1	12.1	119	336	374
M	43.7	12.3	112	356	377
N	42.8	12.4	114	332	372
O	43.9	12.4	104	312	349
P	43.4	12.9	109	302	359
Q	43.1	12.0	109	316	358
S	42.9	13.7	111	328	353
T	43.6	11.8	113	350	409
Current FKI Average:	43.3	12.5	112	325	370
Cumulative FKI Average:	43.4	12.8	112	331	376
FKI Index, %	99.8	97.7	100.0	98.2	98.4

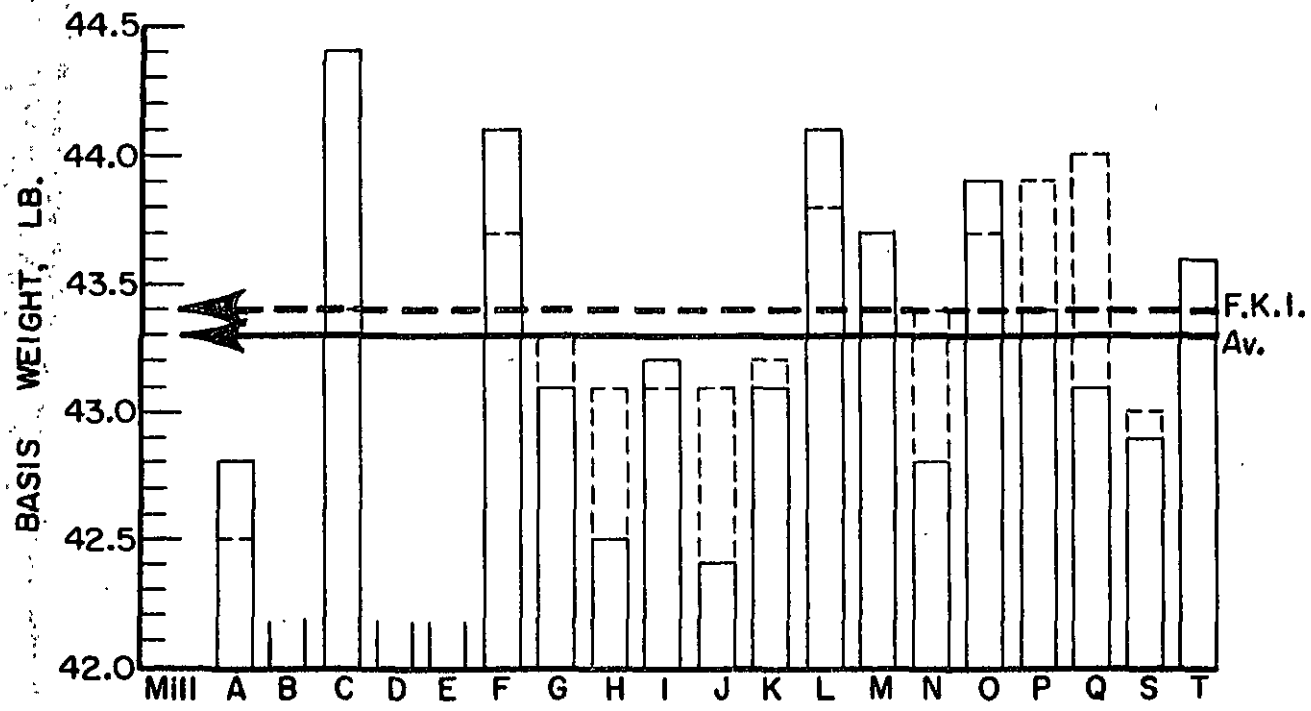

Figure 1

Comparison of Basis Weight Results for May, 1959

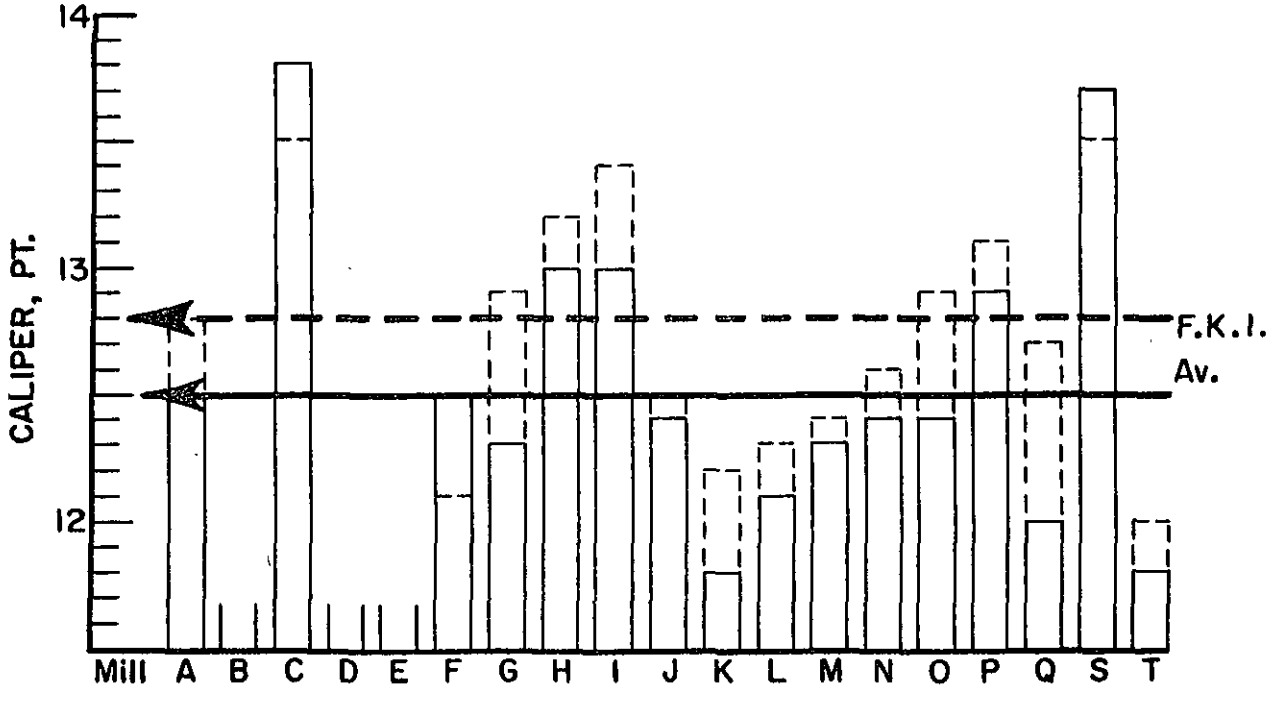

Figure 2

Comparison of Caliper Results for May, 1959

——— Current mill average

– – – – – Cumulative mill average

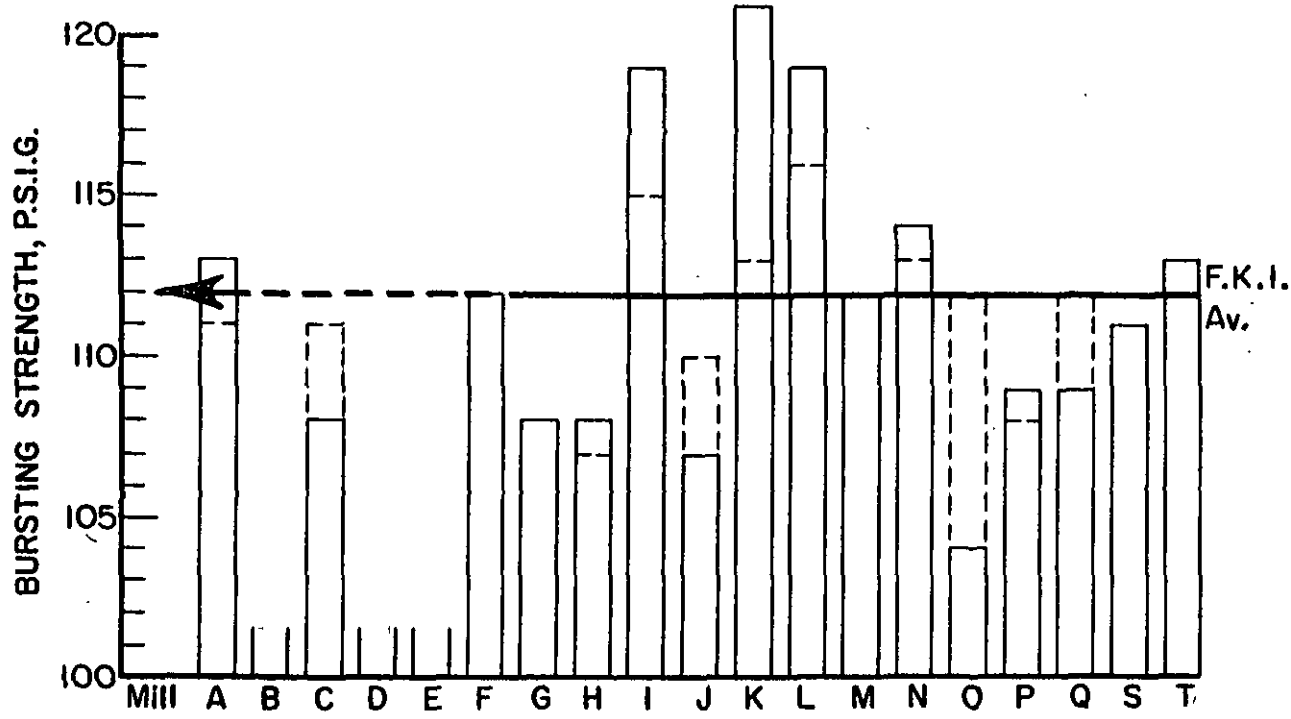

Figure 3

Comparison of Bursting Strength Results for May, 1959

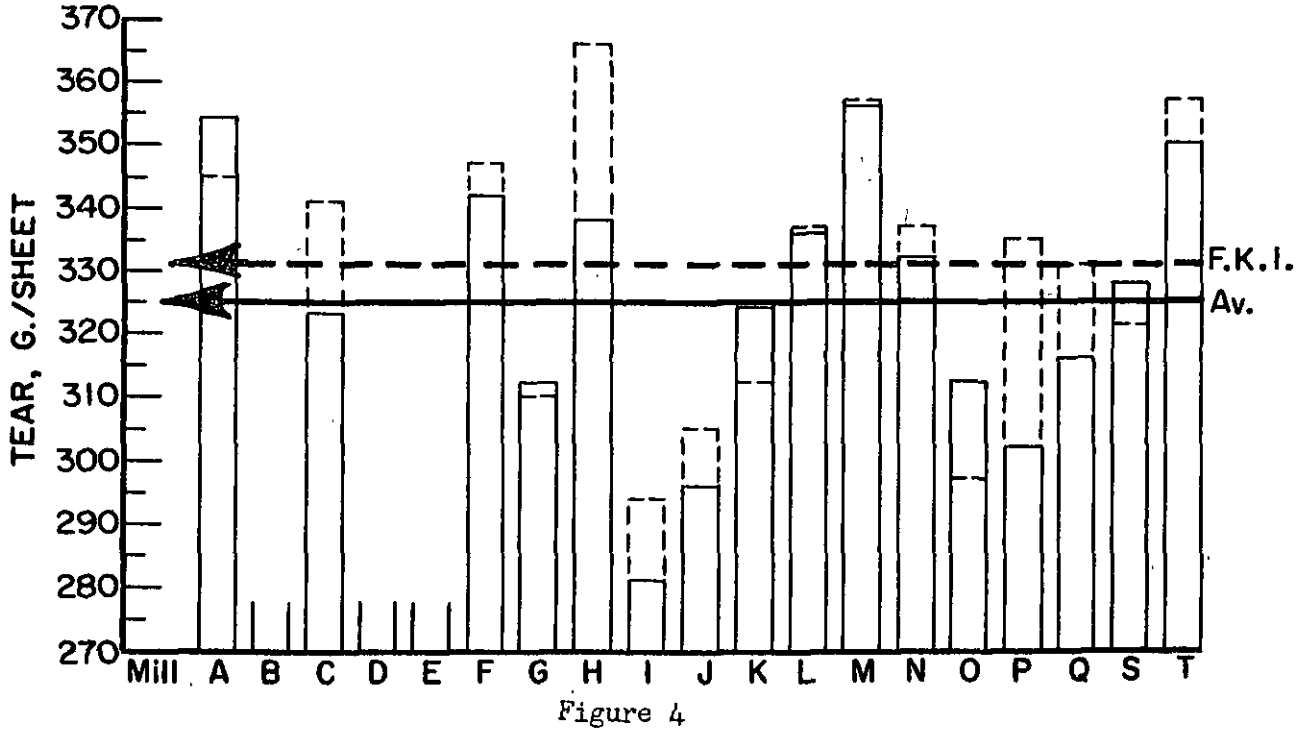

Figure 4

Comparison of Machine-Direction Tear Results for May, 1959

——— Current mill average
– – – – – Cumulative mill average

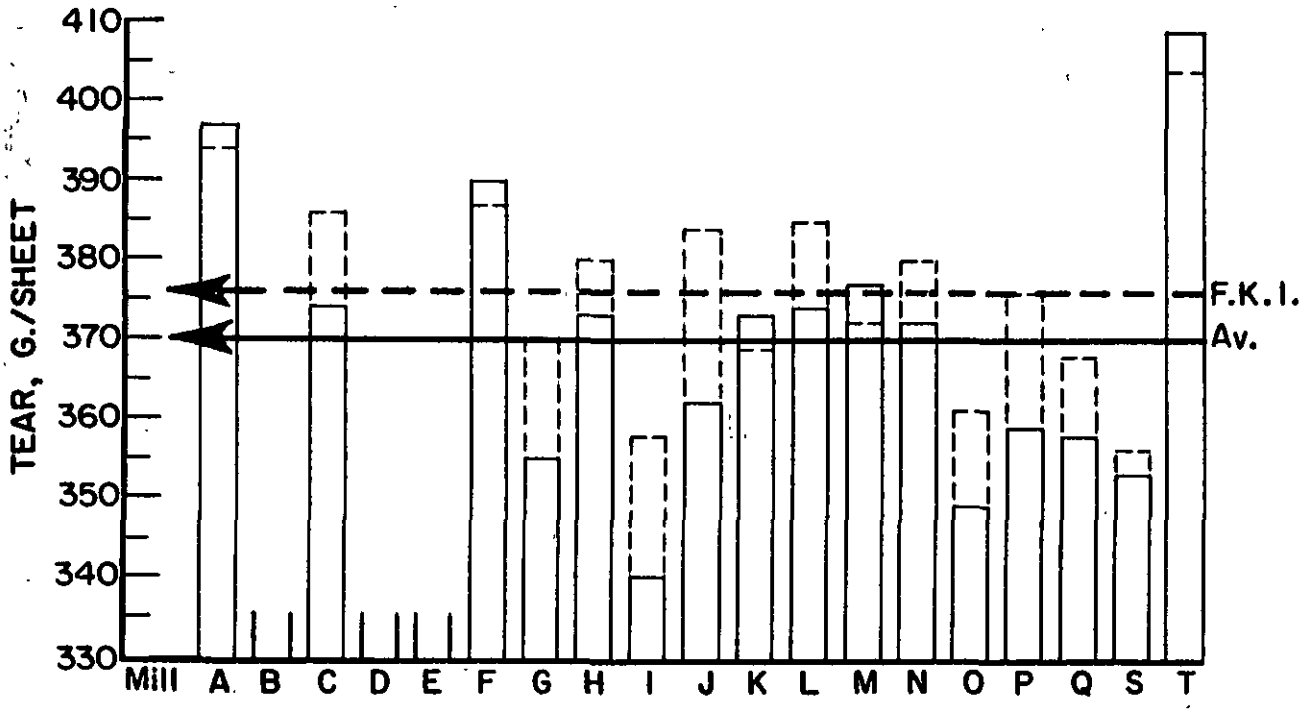

Figure 5.
Comparison of Cross-Machine Direction Tear Results for May, 1959
——— Current mill average
- - - - - Cumulative mill average

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.3 lb., and the cumulative F.K.I. average basis weight is 43.4 lb. Hence, the F.K.I. index for basis weight determined in per cent as indicated above is 99.8 and signifies that the current F.K.I. average basis weight is slightly lower than the cumulative F.K.I. average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mill C had the highest average basis weight of 44.4 lb. which was approximately 5.7% higher than the 42-lb. specification. The lowest average basis weight of 42.4 lb., which was approximately 1.0% higher than the 42-lb. specification, was associated with Mill J.

The amount by which the mills vary from the 42-lb. specification is shown in Table II-A.

A comparison of the current F.K.I. basis weight average for this period with that for the previous period shows that basis weight has decreased from 43.6 to 43.3 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 11.8 points for Mills K and T to a high of 13.8 points for Mill C. The current F.K.I. caliper average is 12.5 points, which is lower than the cumulative F.K.I. average of 12.8 points. The F.K.I. index for caliper is 97.7%.

TABLE II-A

PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT

SPECIFICATION

Mill Code	Per Cent
A	+1.9
B	--
C	+5.7
D	--
E	--
F	+5.0
G	+2.6
H	+1.2
I	+2.9
J	+1.0
K	+2.6
L	+5.0
M	+4.0
N	+1.9
O	+4.5
P	+3.3
Q	+2.6
S	+2.1
T	+3.8

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II and Figure 3 that the current mill averages for bursting strength ranged from a low of 104 for Mill O to a high of 121 for Mill K. The current F.K.I. bursting strength average is 112 p.s.i. gage, which is the same as the cumulative F.K.I. average.

The Elmendorf tear results shown in Table II for the various mills are presented graphically in Figures 4 and 5. These presentations show that Mill M had the highest machine direction tear average of 356 g./sheet, and Mill I had the lowest average of 281 g./sheet. It may be further noted in Table II that the highest cross-machine direction tear average of 409 g./sheet was obtained on the linerboard from Mill T and that the lowest average of 340 g./sheet was associated with Mill I. It may be observed also in Table II that the current F.K.I. averages for both machine direction and cross-machine direction Elmendorf tear are slightly lower than their respective F.K.I. averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for basis weight, caliper, machine direction, and cross-machine direction Elmendorf tear are slightly lower than their respective cumulative F.K.I. averages, and the current F.K.I. average for bursting strength is the same as the cumulative F.K.I. average.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XXI for Mills A through T, respectively.

In addition to the current and cumulative average, the mill factor and mill index are given for each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are shown in Table XXI-A.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182086	----	5/12/59	5/ 1/59	2	43.2	41.2	42.4	13.0	12.2	12.6	143	91	111	416	296	344[a]	448	368	399[a]
182144	----	5/18/59	5/12/59	2	44.4	42.0	43.6	12.5	11.3	11.9	143	90	120	416	352	378[a]	464	384	417[a]
182180	----	5/22/59	5/14/59	2	43.0	41.2	41.9	12.8	12.0	12.3	127	102	113	376	312	345[a]	424	344	385[a]
182190	----	5/25/59	5/20/59	1	43.8	42.0	43.2	13.5	12.5	13.0	133	94	109	376	312	348	432	360	387[a]
Current Mill Average:							42.8			12.5			113			354			397
Cumulative Mill Average:							42.5			12.8			111			345			394
Mill Factor, %							100.7			97.7			101.8			102.6			100.8
Mill Index, %							98.6			97.7			100.9			106.9			105.6

TABLE IV

MILL B -- 42-LB. LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE V

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182078	WFlS	5/11/59	4/25/59	2	45.2	42.8	43.7	14.3	13.0	13.6	130	85	107	352	280	321[a]	416	328	365[a]
182079	WFlS	5/11/59	4/30/59	2	46.0	44.0	45.2	14.5	13.0	13.9	130	85	107	368	272	316[a]	424	360	392[a]
182129	WFlS	5/14/59	5/ 3/59	2	46.0	44.0	44.7	14.4	12.8	13.5	130	84	108	360	272	311	408	320	375[a]
182133	WFlS	5/15/59	5/ 5/59	2	45.8	43.6	45.0	14.6	13.0	13.7	128	87	108	352	272	313	424	336	377[a]
182189	WFlS	5/25/59	5/13/59	2	44.4	42.8	43.7	15.0	13.7	14.1	121	94	111	416	328	352	392	328	359[a]
Current Mill Average:							44.4			13.8			108			323			374
Cumulative Mill Average:							43.4			13.5			111			341			386
Mill Factor, %							102.3			102.2			97.3			94.7			96.9
Mill Index, %							102.3			107.8			96.4			97.6			99.5

TABLE VI

MILL D -- 42-LB. LINERBOARD

No samples submitted.

TABLE VII

MILL E -- 42-LB. LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE VIII

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182056	W.F.	5/ 7/59	4/11/59	-	45.6	43.6	44.4	13.1	12.1	12.8	138	70	110	400	328	364	448	360	409[a]
182057	W.F.	5/ 7/59	4/12/59	-	46.0	44.0	44.6	13.5	12.0	12.9	137	90	109	448	304	366[a]	448	312	385[a]
182058	W.F.	5/ 7/59	4/17/59	-	46.0	44.0	44.6	13.5	12.0	12.7	139	87	111	384	320	349[a]	416	336	389[a]
182059	W.F.	5/ 7/59	4/18/59	-	44.4	42.8	44.0	13.1	12.0	12.8	135	80	103	400	304	355[a]	448	336	402[a]
182125	W.F.	5/14/59	4/20/59	-	44.2	43.6	43.9	13.6	12.6	13.1	123	94	111	360	320	333	480	360	404[a]
182126	W.F.	5/14/59	4/21/59	-	44.4	42.8	43.7	12.2	11.2	11.8	143	102	121	368	288	323[a]	448	352	393[a]
182127	W.F.	5/14/59	4/22/59	-	44.0	42.8	43.2	11.8	10.6	11.4	137	96	119	352	272	311[a]	400	336	355[a]
182128	W.F.	5/14/59	4/25/59	-	45.4	43.8	44.3	12.8	11.8	12.3	139	78	113	360	304	339[a]	432	336	383[a]
Current Mill Average:							44.1			12.5			112			342			390
Cumulative Mill Average:							43.7			12.1			112			347			387
Mill Factor, %							100.9			103.3			100.0			98.6			100.8
Mill Index, %							101.6			97.7			100.0			103.3			103.7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE IX

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, p.s.i. gage Max.	Bursting Strength, p.s.i. gage Min.	Bursting Strength, p.s.i. gage Av.	Elmendorf Tear, g./sheet In Max.	In Min.	In Av.	Across Max.	Across Min.	Across Av.
182143	WFlS	5/18/59	4/29/59	1	44.0	42.2	43.1	13.2	11.8	12.3	130	75	108	360	256	312[a]	400	328	355[a]
Current Mill Average:							43.1			12.3			108			312			355
Cumulative Mill Average:							43.3			12.9			108			310			370
Mill Factor, %							99.5			95.3			100.0			100.6			95.9
Mill Index, %							99.3			96.1			96.4			94.3			94.4

TABLE X

MILL H -- 42-LB. LINERBOARD

182176	W.	5/22/59	5/ 6/59	2	43.4	41.0	42.3	13.6	12.4	13.0	132	86	107	360	272	325[a]	400	344	366[a]
182177	W.	5/22/59	5/ 9/59	2	44.0	42.0	42.8	13.4	12.4	13.0	125	83	109	384	312	351[a]	440	328	380[a]
Current Mill Average:							42.5			13.0			108			338			373
Cumulative Mill Average:							43.1			13.2			107			366			380
Mill Factor, %							98.6			98.5			100.9			92.3			98.2
Mill Index, %							97.9			101.6			96.4			102.1			99.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XI

MILL I -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182060	W.F.	5/ 7/59	4/12/59	1	43.0	42.0	42.3	12.6	12.0	12.4	141	95	122	320	224	261	352	304	330[a]
182061	W.F.	5/ 7/59	4/16/59	1	44.0	43.6	43.9	13.5	12.8	13.0	144	100	124	320	240	279	400	304	352[a]
182062	W.F.	5/ 7/59	4/20/59	1	44.4	42.4	43.6	14.0	12.8	13.1	146	113	127	312	224	281	368	312	349[a]
182063	W.F.	5/ 7/59	4/24/59	1	43.8	42.2	43.0	13.9	12.5	13.5	130	70	103	376	224	285	376	272	313[a]
182178	W.F.	5/22/59	4/27/59	1	44.2	42.8	43.5	13.8	12.8	13.2	152	109	126	328	240	289[a]	400	336	363[a]
182179	W.F.	5/22/59	4/30/59	1	43.4	41.6	42.7	13.2	12.0	12.7	134	88	112	344	256	288	368	296	331[a]
Current Mill Average:							43.2			13.0			119			281			340
Cumulative Mill Average:							43.1			13.4			115			294			358
Mill Factor, %							100.2			97.0			103.5			95.6			95.0
Mill Index, %							99.5			101.6			106.2			84.9			90.4

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XII

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182025	WF1S	5/ 1/59	4/24/59	1	43.0	41.2	42.1	12.8	12.0	12.3	121	82	109	368	240	283	400	336	362[a]
182142	WF1S	5/18/59	5/ 5/59	1	43.8	41.8	42.8	12.8	11.7	12.3	120	90	106	336	256	312	416	320	367[a]
182174	WF1S	5/21/59	5/10/59	1	43.4	41.4	42.4	13.5	12.0	12.5	125	87	106	352	216	292	432	304	357[a]
Current Mill Average:							42.4			12.4			107			296			362
Cumulative Mill Average:							43.1			12.5			110			305			384
Mill Factor, %							98.4			99.2			97.3			97.0			94.3
Mill Index, %							97.7			96.9			95.5			89.4			96.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XIII

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182120	W.F.	5/14/59	4/21/59	2	44.2	42.0	43.6	12.1	11.4	11.8	136	105	126	400	288	337	432	352	393[a]
182121	W.F.	5/14/59	4/21/59	2	44.0	42.0	43.6	12.4	10.8	11.8	141	96	124	416	272	342	416	352	374[a]
182122	W.F.	5/14/59	4/21/59	2	44.0	42.0	43.1	12.4	11.5	11.9	138	105	122	416	256	325	416	336	367[a]
182123	W.F.	5/14/59	4/16/59	2	44.0	42.2	43.3	12.5	11.5	12.0	139	108	121	384	288	322	416	336	364[a]
182124	W.F.	5/14/59	4/21/59	2	44.2	43.6	43.9	12.6	11.2	11.8	140	112	124	368	288	334	448	352	394[a]
182139	W.F.	5/18/59	5/ 7/59	2	43.2	42.0	42.6	12.0	11.1	11.7	144	98	117	344	272	307	400	336	369[a]
182140	W.F.	5/18/59	5/ 7/59	2	43.0	42.0	42.4	12.0	11.0	11.6	151	95	119	336	272	306	400	328	366[a]
182141	W.F.	5/18/59	5/ 7/59	2	43.6	42.0	42.6	12.2	11.3	11.6	130	87	115	368	272	322	384	320	359[a]
Current Mill Average:							43.1			11.8			121			324			373
Cumulative Mill Average:							43.2			12.2			113			312			369
Mill Factor, %							99.8			96.7			107.1			103.8			101.1
Mill Index, %							99.3			92.2			108.0			97.9			99.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XIV

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182089	W.F.	5/12/59	4/30/59	1	45.2	43.6	44.2	12.4	11.6	12.0	150	104	122	392	264	326[a]	424	328	379[a]
182090	W.F.	5/12/59	4/30/59	1	44.6	42.8	43.9	12.7	11.2	12.0	137	93	116	384	296	323[a]	400	344	371[a]
182171	W.F.	5/20/59	5/10/59	2	45.4	43.8	44.3	13.1	12.0	12.5	140	91	120	400	296	344[a]	392	328	375[a]
182188	W.F.	5/25/59	5/18/59	2	44.0	43.2	43.8	12.0	11.3	11.7	144	98	117	400	320	352[a]	416	336	371[a]
Current Mill Average:							44.1			12.1			119			336			374
Cumulative Mill Average:							43.8			12.3			116			337			385
Mill Factor, %							100.7			98.4			102.6			99.7			97.1
Mill Index, %							101.6			94.5			106.2			101.5			99.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959--(continued)

TABLE XV

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb. Max.	Basis Weight, lb. Min.	Basis Weight, lb. Av.	Caliper, points Max.	Caliper, points Min.	Caliper, points Av.	Bursting Strength, p.s.i. gage Max.	Bursting Strength, p.s.i. gage Min.	Bursting Strength, p.s.i. gage Av.	Elmendorf Tear, g./sheet In Max.	In Min.	In Av.	Across Max.	Across Min.	Across Av.
182034	W.F.	5/ 4/59	4/19/59	-	45.4	43.8	44.2	12.9	11.9	12.4	126	87	111	424	320	359[a]	416	336	377[a]
182035	W.F.	5/ 4/59	4/21/59	-	44.0	43.0	43.6	13.3	12.0	12.5	127	101	111	400	336	358[a]	416	352	371[a]
182168	W.F.	5/19/59	5/ 3/59	-	44.0	43.0	43.5	12.7	11.7	12.1	135	86	113	392	304	347	400	336	367
182169	W.F.	5/19/59	5/ 3/59	-	44.0	42.6	43.6	12.3	12.0	12.1	130	94	112	384	304	358[a]	416	352	395[a]
Current Mill Average:							43.7			12.3			112			356			377
Cumulative Mill Average:							43.7			12.4			112			357			372
Mill Factor, %							100.0			99.2			100.0			99.7			101.3
Mill Index, %							100.7			96.1			100.0			107.6			100.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182019	W.F.	5/ 1/59	3/31/59	2	43.0	42.0	42.3	12.5	12.0	12.1	149	79	117	384	296	343	432	352	382[a]
182024	W.F.	5/ 1/59	4/10/59	2	42.6	42.0	42.2	12.4	11.7	12.0	139	97	119	368	296	327[a]	400	336	378[a]
182031	W.F.	5/ 4/59	4/14/59	2	43.8	42.6	43.1	13.0	12.0	12.5	128	89	113	384	288	323	400	336	374[a]
182032	W.F.	5/ 4/59	4/21/59	2	44.0	42.8	43.2	13.5	12.4	12.9	140	96	113	368	280	341	416	336	367[a]
182087	W.F.	5/12/59	4/29/59	2	44.0	42.4	43.2	12.7	12.0	12.4	147	95	118	352	296	327[a]	416	360	373[a]
182088	W.F.	5/12/59	4/30/59	2	43.8	43.2	43.5	12.9	12.1	12.6	139	93	116	392	296	339[a]	400	352	375[a]
182118	W.F.	5/13/59	5/ 3/59	2	43.2	41.6	42.5	12.7	12.0	12.3	131	88	112	384	272	327[a]	384	328	356[a]
182119	W.F.	5/13/59	5/ 4/59	2	43.6	42.4	42.8	12.8	12.0	12.3	130	94	114	344	272	315[a]	416	336	369[a]
182172	W.F.	5/21/59	5/10/59	2	43.6	42.0	42.7	12.9	12.1	12.6	129	87	110	392	304	338	448	336	380[a]
182173	W.F.	5/21/59	5/11/59	2	43.0	42.0	42.6	12.9	12.2	12.5	133	87	112	360	304	335[a]	400	328	366[a]
Current Mill Average:							42.8			12.4			114			332			372
Cumulative Mill Average:							43.4			12.6			113			337			380
Mill Factor, %							98.6			98.4			100.9			98.5			97.9
Mill Index, %							98.6			96.9			101.8			100.3			98.9

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182033	W.F.	5/ 4/59	3/25/59	1	44.2	43.6	43.9	13.0	12.0	12.3	113	84	103	336	272	305[a]	368	304	343[a]
182132	W.F.	5/15/59	4/10/59	1	44.4	43.0	43.9	13.0	12.0	12.4	122	75	105	400	272	318	392	320	356[a]
Current Mill Average:							43.9			12.4			104			312			349
Cumulative Mill Average:							43.7			12.9			112			297			361
Mill Factor, %							100.5			96.1			92.9			105.1			96.7
Mill Index, %							101.2			96.9			92.9			94.3			92.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XVIII

MILL P -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182148	W.F.	5/18/59	4/ 3/59	1	44.2	42.0	43.3	13.6	12.0	12.9	115	85	102	336	240	301	400	304	341[a]
182149	W.F.	5/18/59	4/ 6/59	1	44.0	42.0	43.0	14.0	12.5	13.0	126	88	106	368	256	309	416	304	347[a]
182150	W.F.	5/18/59	4/22/59	1	44.6	42.0	43.2	13.3	12.4	13.0	130	86	107	320	272	297	384	304	340[a]
182151	W.F.	5/18/59	4/22/59	1	44.2	42.4	43.8	13.2	12.6	13.0	132	90	112	352	240	305	432	336	385[a]
182152	W.F.	5/18/59	4/24/59	1	44.2	42.4	43.2	13.1	12.0	12.8	136	88	110	336	240	299	400	320	354[a]
182153	W.F.	5/18/59	4/24/59	1	44.2	42.4	43.8	13.5	12.4	13.0	128	86	110	376	240	303	392	336	359[a]
182154	W.F.	5/18/59	4/26/59	1	43.8	42.0	43.1	13.0	12.1	12.6	131	84	111	360	256	300	432	336	383[a]
182155	W.F.	5/18/59	4/26/59	1	45.0	42.4	43.7	13.5	12.1	12.8	129	83	112	344	240	301	400	336	359[a]
Current Mill Average:							43.4			12.9			109			302			359
Cumulative Mill Average:							43.9			13.1			108			335			376
Mill Factor, %							98.9			98.5			100.9			90.1			95.5
Mill Index, %							100.0			100.8			97.3			91.2			95.5

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
181954	W.F.	4/27/59	4/22/59	-	44.2	43.4	43.9	13.2	12.2	12.8	125	92	107	392	304	334[a]	392	312	362[a]
181955	W.F.	4/27/59	4/23/59	-	45.0	43.8	44.1	12.4	11.5	12.1	123	99	113	344	272	307[a]	392	320	367[a]
181956	W.F.	4/27/59	4/24/59	-	44.4	42.8	43.7	12.4	11.6	12.1	124	94	109	368	288	317[a]	408	336	367[a]
182156	W.F.	5/18/59	5/ 6/59	-	43.8	42.8	43.4	12.5	11.7	12.2	123	100	111	368	256	315	392	320	353[a]
182157	W.F.	5/18/59	5/ 7/59	-	43.0	42.0	42.5	12.2	11.2	11.8	129	77	111	368	288	321[a]	432	320	359[a]
182158	W.F.	5/18/59	5/ 8/59	-	43.6	42.4	42.8	12.1	11.5	11.8	122	96	110	352	264	300[a]	352	304	326[a]
182159	W.F.	5/18/59	5/13/59	-	44.0	42.0	43.0	12.2	11.2	12.0	136	96	115	352	272	308[a]	440	336	383[a]
182160	W.F.	5/18/59	5/14/59	-	42.6	41.4	42.1	12.1	11.4	11.9	128	95	109	352	272	307[a]	384	320	351[a]
182161	W.F.	5/18/59	5/15/59	-	43.0	42.2	42.6	12.2	11.4	11.8	114	85	100	368	280	333[a]	392	320	357[a]
Current Mill Average:							43.1			12.0			109			316			358
Cumulative Mill Average:							44.0			12.7			112			331			368
Mill Factor, %							98.0			94.5			97.3			95.5			97.3
Mill Index, %							99.3			93.8			97.3			95.5			95.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XX

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182026	WF1S	5/ 1/59	4/ 2/59	2	43.8	42.0	43.0	14.5	13.0	13.9	129	95	110	384	288	335[a]	400	304	353[a]
182027	WF1S	5/ 1/59	4/10/59	2	45.0	42.4	43.7	15.0	13.5	14.3	134	90	110	400	280	352[a]	464	320	375[a]
182028	WF1S	5/ 1/59	4/16/59	2	44.4	42.4	43.7	14.2	13.0	13.5	128	93	114	352	296	339[a]	400	320	353[a]
182029	WF1S	5/ 1/59	4/21/59	2	44.0	42.0	42.8	14.1	13.0	13.7	136	80	113	400	280	323	384	328	354[a]
182030	WF1S	5/ 1/59	4/27/59	2	44.0	42.0	42.6	13.8	13.0	13.4	145	88	120	344	272	317[a]	384	336	354[a]
182091	WF1S	5/13/59	4/18/59	2	43.8	42.0	42.6	14.6	13.0	13.9	129	82	107	416	264	337[a]	424	320	359[a]
182092	WF1S	5/13/59	4/28/59	2	43.6	42.2	42.8	13.6	12.8	13.2	128	89	109	416	208	317[a]	400	304	352[a]
182093	----	5/13/59	4/29/59	2	44.0	40.8	42.0	14.3	13.0	13.7	120	84	103	384	272	307[a]	368	272	324[a]
Current Mill Average:							42.9			13.7			111			328			353
Cumulative Mill Average:							43.0			13.5			111			321			356
Mill Factor, %							99.8			101.5			100.0			102.2			99.2
Mill Index, %							98.8			107.0			99.1			99.1			93.9

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXI

MILL T -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
182020	W.B.	5/ 1/59	4/ 2/59	-	44.8	42.8	44.0	12.4	11.3	11.8	140	99	116	416	320	361	480	384	428[a]
182021	W.B.	5/ 1/59	4/ 4/59	-	44.4	42.8	43.8	12.8	11.2	12.0	138	90	115	392	304	355	448	360	397[a]
182022	W.B.	5/ 1/59	4/ 4/59	-	45.0	42.6	44.2	12.5	11.3	12.0	156	93	115	400	336	357[a]	456	400	429[a]
182023	W.B.	5/ 1/59	4/ 6/59	-	43.2	42.0	42.7	12.0	11.0	11.5	137	93	113	392	304	350	424	384	406[a]
182134	W.B.	5/15/59	4/11/59	-	43.6	41.0	42.6	12.0	11.0	11.7	138	85	111	384	320	347	448	368	400[a]
182135	W.B.	5/15/59	4/10/59	-	44.2	41.8	43.4	12.0	10.6	11.4	135	102	115	384	312	351[a]	448	368	409[a]
182136	W.B.	5/15/59	4/16/59	-	44.2	42.0	43.5	12.0	11.0	11.7	141	98	116	368	280	340	440	384	405[a]
182137	W.B.	5/15/59	4/18/59	-	44.2	43.4	44.0	12.1	11.2	11.7	126	87	111	408	304	337	432	368	400[a]
182138	W.B.	5/15/59	4/19/59	-	44.2	42.2	43.6	12.8	11.7	12.2	145	82	111	376	304	343	448	384	407[a]
182145	W.B.	5/18/59	4/20/59	-	44.4	43.0	43.9	12.5	11.1	12.0	130	88	112	384	320	357	448	384	416[a]
182146	W.B.	5/18/59	4/23/59	-	44.4	42.4	43.8	12.2	11.0	11.6	128	93	111	384	320	346	440	368	406[a]
182147	W.B.	5/18/59	4/26/59	-	44.8	42.0	43.5	12.0	11.0	11.6	134	95	113	384	304	355	440	384	405[a]
Current Mill Average:							43.6			11.8			113			350			409
Cumulative Mill Average:							43.3			12.0			113			357			404
Mill Factor, %							100.7			98.3			100.0			98.0			101.2
Mill Index, %							100.5			92.2			100.9			105.7			108.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XXI-A

SUMMARY OF SHEET FINISH DATA

Mill Code	Number of Sample Lots		
	Water Finish	Water Finish One Side	Other
A			4[a]
B	No samples submitted		
C		5	
D	No samples submitted		
E	No samples submitted		
F	8		
G		1	
H	2		
I	6		
J		3	
K	8		
L	4		
M	4		
N	10		
O	2		
P	8		
Q	9		
S		7	1[a]
T	12		
Totals	73	16	5

[a] Unidentified.

PART II. COMPARISON OF RESULTS OBTAINED AT THE INSTITUTE OF PAPER CHEMISTRY WITH THOSE OBTAINED AT THE MILLS

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. Mill test conditions are shown in Table XXII, where it may be noted that the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the preconditioning and conditioning time periods varied considerably.

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of differences between Institute and mill test results is given in Table XXIV for the current period and the two previous periods.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the over-all average difference between Institute and mill results for each of these tests based on the data for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the over-all average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

TABLE XXII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

Mill Code	Preconditioning R.H., %	Preconditioning Temperature, °F.	Preconditioning Time, hr.	Conditioning R.H., %	Conditioning Temperature, °F.	Conditioning Time, hr.
A		None		50	73	24-120
B	No samples submitted.					
C	50	70-72	120	50	70-72	120
D	No samples submitted.					
E	No samples submitted.					
F	50-51	73-75	48+	50	73	48+
G	50	73	48	50	73	2
H		None		53	73	--
I		None		57-68	80-85	--
J		None		49-51	70-72	--
K	50	73	24	50	73	24
L		None		50	73	24
M		None		50	73	0.5
N		None		50	73-75	24
O	54-60	74-75	0.5	50-72	52-70	48
P	50	73	24	50	73	24
Q	34-35	77-79	8	48-52	71--73	16
S	50	72	24		None	
T		None		55-56	71-73	48

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results)

Mills*	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T
No. Samples Compared	4	0	5	0	0	8	1	2	6	3	8	4	4	10	2	8	9	8	12
Basis Weight																			
Institute	42.8		44.4			44.1	43.1	42.5	43.2	42.4	43.1	44.1	43.7	42.8	43.9	43.4	43.1	42.9	43.6
Mill	42.2		44.1			43.8	43.1	42.4	42.2	42.4	43.0	43.8	43.3	42.9	44.0	42.8	42.7	43.7	43.6
Av. Diff.**	-0.6		-0.3			-0.3	0.0	-0.1	-1.0	0.0	-0.1	-0.3	-0.4	+0.1	+0.1	-0.6	-0.4	+0.8	0.0
Max. Diff.***	-1.2		-0.8			-0.6	0.0	-0.2	-1.7	-0.3	-0.5	-0.8	-0.6	+0.6	+0.2	-1.0	-0.9	+1.3	±0.4
Caliper																			
Institute	12.5		13.8			12.5	12.3	13.0	13.0	12.4	11.8	12.1	12.3	12.4	12.4	12.9	12.0	13.7	11.8
Mill	12.2		13.1			12.4	11.9	12.3	12.8	12.2	11.7	11.8	12.1	12.2	12.0	12.5	12.0	13.4	11.5
Av. Diff.**	-0.3		-0.7			-0.1	-0.4	-0.7	-0.2	-0.2	-0.1	-0.3	-0.2	-0.2	-0.4	-0.4	0.0	-0.3	-0.3
Max. Diff.***	-0.5		-0.7			+0.6	-0.4	-0.7	-0.7	-0.2	±0.1	-0.5	-0.4	-0.4	-0.4	-0.6	-0.6	-0.6	-0.4
Bursting Strength																			
Institute	113		108			112	108	108	119	107	121	119	112	114	104	109	109	111	113
Mill	113		106			112	111	111	111	108	113	115	109	114	108	112	112	106	115
Av. Diff.**	0		-2			0	+3	+3	-8	+1	-8	-4	-3	0	+4	+3	+3	-5	+2
Max. Diff.***	±1		-9			-5	+3	+7	-17	+3	-10	-7	-5	-4	+5	+6	+6	-8	+9
Tearing Strength, in																			
Institute	354		323			342	312	338	281	296	324	336	356	332	312	302	316	328	350
Mill	--		309			367	288	350	205	336	277	356	333	339	321	284	292	329	372
Av. Diff.**	--		-14			+25	-24	+12	-76	+40	-47	+20	-23	+7	+9	-18	-24	+1	+22
Max. Diff.***	--		-45			+50	-24	+25	-106	+52	-61	+47	-38	+28	+15	-43	-46	-26	+49
Tearing Strength, across																			
Institute	397		374			390	355	373	340	362	373	374	377	372	349	359	358	353	409
Mill	--		411			412	332	368	288	409	356	405	353	391	380	357	335	381	440
Av. Diff.**	--		+37			+22	-23	-5	-52	+47	-17	+31	-24	+19	+31	-2	-23	+28	+31
Max. Diff.***	--		+52			+54	-23	-11	-70	+49	- 52	+42	-39	+ 40	+33	-31	-52	+56	+54

* Comparison based on averages involved only those samples on which mill test data were submitted.
** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Difference, Per Cent

Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, across
A	Current	-1	-2	0	--	--
	144th	-2	-3	0	--	--
	142nd	-1	-4	-4	--	--
B	Current	--	--	--	--	--
	144th	-0.7	-2	+3	+4	+2
	142nd	-2	-4	+2	-3	+0.3
C	Current	-0.7	-5	-2	-4	+10
	144th	-2	-3	-2	-4	+2
	142nd	-0.5	-2	-3	-5	+1
D	Current	--	--	--	--	--
	144th	--	--	--	--	--
	142nd	--	--	--	--	--
E	Current	--	--	--	--	--
	144th	--	--	--	--	--
	142nd	--	--	--	--	--
F	Current	-0.7	-0.8	0	+7	+6
	144th	-2	0	+2	-4	-1
	142nd	-0.2	-2	-0.9	+5	-1
G	Current	0	-3	+3	-8	-6
	144th	-0.7	-4	+0.9	-11	-0.6
	142nd	-0.9	-3	-2	-14	-6
H	Current	-0.2	-5	+3	+4	-1
	144th	0	-3	-5	+4	-4
	142nd	-0.7	+2	-4	-1	-3
I	Current	-2	-2	-7	-27	-15
	144th	-3	-2	-3	-25	-15
	142nd	-3	-3	-0.9	-24	-14
J	Current	0	-2	+0.9	+14	+13
	144th	-2	-0.8	-0.9	+10	+ 7
	142nd	-2	-3	-0.9	-1	+2
K	Current	-0.2	-0.8	-7	-15	-5
	144th	+0.2	-2	-5	-14	-7
	142nd	-0.9	-2	-3	-11	-5
L	Current	-0.7	-2	-3	+6	+8
	144th	-0.7	-2	0	+5	+5
	142nd	-2	-4	-2	-2	-1
M	Current	-0.9	-2	-3	-6	-6
	144th	-1	-2	-4	-8	+2
	142nd	-3	-3	-3	-15	-7
N	Current	+0.2	-2	0	+2	+5
	144th	-1	-2	-3	+9	+9
	142nd	-0.7	-2	-0.9	+2	+2
O	Current	+0.2	-3	+4	+3	+9
	144th	-3	-0.8	+4	+0.7	-2
	142nd	-0.9	-4	+2	+0.6	-0.5
P	Current	-1	-3	+3	-6	-0.6
	144th	-2	-2	+2	-8	+2
	142nd	-0.9	-4	-0.9	-9	-0.8
Q	Current	-0.9	0	+3	-8	-6
	144th	0	-2	+2	-5	-2
	142nd	-0.7	-2	0	-3	-2
S	Current	+2	-2	-5	+0.3	+8
	144th	+1	-3	-4	+3	+6
	142nd	+0.9	-4	-5	-6	+3
T	Current	0	-3	+2	+6	+8
	144th	0	-2	-0.9	+4	+5
	142nd	-1	-3	-2	-6	+1

It may be noted in Table XXIV that for the current period the largest average difference (per cent) between the average basis weight results of the Institute and those of a given mill on corresponding samples was two per cent. By comparison, the largest average difference (per cent) noted for the previous two periods was three per cent. Further, it may be noted that the average basis weight results for Mills N, O, and S were higher than those for the Institute, the average results for Mills G, J, and T were the same, and the average results for the other mills were lower. In general, agreement is very good.

The maximum variation in caliper for the current period was five per cent. This was slightly larger than the maximum variation of four per cent for the previous two periods. Compared with the Institute's results, the average test result for Mill Q was the same, and the average test results for the other mills were lower. The variations of five per cent for Mills C and H appear to be excessive.

It may be noted in Table XXIV that the bursting strength results exhibited a maximum variation of seven per cent for the current period. The maximum variation for the two preceding periods was five per cent. The average results for Mills G, H, J, O, P, Q, and T were higher than those for the Institute, the average results for Mills A, F, and N were the same, and the average results for the other mills were lower. The variations of seven per cent noted for Mills I and K appear to be excessive.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills F, H, J, L, N, O, S, and T were higher than those for the Institute, and the average results for the other mills were lower. The maximum variation for the current period was twenty-seven per cent compared with a maximum variation of twenty-five per cent for the two preceding periods. Agreement between the Institute and mill results was good in most cases. However, several mills--namely, I, J, and K, were associated with differences greater than ten per cent which may be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills C, F, J, L, N, O, S, and T were higher than those for the Institute, and the average results for the other mills were lower. The maximum variation for the current period was fifteen per cent, the same as the maximum variation for the two preceding periods. As in the case of the machine direction results, agreement between Institute and mill results was good. The only differences greater than ten per cent were associated with Mills I and J.

The comparisons of Institute and mill data for individual sample lots are given in Tables XXV to XLIII for the various mills. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959

TABLE XXV

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182086	----	5/ 1/59	2	42.4	41.7	-0.7	12.6	12.5	-0.1	111	112	+1	344[a]			399[a]		
182144	----	5/12/59	2	43.6	43.7	+0.1	11.9	11.7	-0.2	120	119	-1	378[a]			417[a]		
182180	----	5/14/59	2	41.9	41.5	-0.4	12.3	12.2	-0.1	113	112	-1	345[a]			385[a]		
182190	----	5/20/59	1	43.2	42.0	-1.2	13.0	12.5	-0.5	109	108	-1	348			387[a]		
Current Mill Average:				42.8	42.2	-0.6	12.5	12.2	-0.3	113	113	0	354			397		

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

No samples submitted

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXVII

MILL C -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182078	WF1S	4/25/59	2	43.7	43.4	-0.3	13.6	12.9	-0.7	107	106	-1	321[a]	299	-22	365[a]	417	+52
182079	WF1S	4/30/59	2	45.2	45.0	-0.2	13.9	13.3	-0.6	107	105	-2	316[a]	335	+19	392[a]	414	+22
182129	WF1S	5/ 3/59	2	44.7	44.7	0.0	13.5	12.8	-0.7	108	109	+1	311	282	-29	375[a]	421	+46
182133	WF1S	5/ 5/59	2	45.0	44.5	-0.5	13.7	13.0	-0.7	108	107	-1	313	322	+ 9	377[a]	411	+34
182189	WF1S	5/13/59	2	43.7	42.9	-0.8	14.1	13.4	-0.7	111	102	-9	352	307	-45	359[a]	393	+34
Current Mill Average:				44.4	44.1	-0.3	13.8	13.1	-0.7	108	106	-2	323	309	-14	374	411	+37

TABLE XXVIII

MILL D -- 42-LB. LINERBOARD

No samples submitted

TABLE XXIX

MILL E -- 42-LB. LINERBOARD

No samples submitted

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXX

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182056	W.F.	4/11/59	-	44.4	43.8	-0.6	12.8	12.6	-0.2	110	110	0	364	383	+19	409[a]	436	+27
182057	W.F.	4/12/59	-	44.6	44.2	-0.4	12.9	12.6	-0.3	109	110	+1	366[a]	369	+ 3	385[a]	404	+19
182058	W.F.	4/17/59	-	44.6	44.2	-0.4	12.7	12.6	-0.1	111	106	-5	349[a]	395	+46	389[a]	416	+27
182059	W.F.	4/18/59	-	44.0	43.7	-0.3	12.8	12.8	0.0	103	105	+2	355[a]	384	+29	402[a]	409	+ 7
182125	W.F.	4/20/59	-	43.9	43.3	-0.6	13.1	12.9	-0.2	111	111	0	333	338	+ 5	404[a]	444	+40
182126	W.F.	4/21/59	-	43.7	43.2	-0.5	11.8	11.3	-0.5	121	122	+1	323[a]	345	+22	393[a]	382	-11
182127	W.F.	4/22/59	-	43.2	43.5	+0.3	11.4	12.0	+0.6	119	116	-3	311[a]	361	+50	355[a]	409	+54
182128	W.F.	4/25/59	-	44.3	44.3	0.0	12.3	12.3	0.0	113	113	0	339[a]	361	+22	383[a]	396	+13
Current Mill Average:				44.1	43.8	-0.3	12.5	12.4	-0.1	112	112	0	342	367	+25	390	412	+22

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

182143	WFlS-	4/29/59	1	43.1	43.1	0.0	12.3	11.9	-0.4	108	111	+3	312[a]	288	-24	355[a]	332	-23
Current Mill Average:				43.1	43.1	0.0	12.3	11.9	-0.4	108	111	+3	312	288	-24	355	332	-23

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXXII

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182176	W.	5/ 6/59	2	42.3	42.1	-0.2	13.0	12.3	-0.7	107	106	- 1	325[a]	324	- 1	366[a]	367	+ 1
182177	W.	5/ 9/59	2	42.8	42.8	0.0	13.0	12.3	-0.7	109	116	+ 7	351[a]	376	+ 25	380[a]	369	-11
Current Mill Average:				42.5	42.4	-0.1	13.0	12.3	-0.7	108	111	+ 3	338	350	+ 12	373	368	- 5

TABLE XXXIII

MILL I -- 42-LB. LINERBOARD

182060	W.F.	4/12/59	1	42.3	42.0	-0.3	12.4	12.9	+0.5	122	111	-11	261	204	- 57	330[a]	276	-54
182061	W.F.	4/16/59	1	43.9	42.9	-1.0	13.0	12.9	-0.1	124	120	- 4	279	244	- 35	352[a]	318	-34
182062	W.F.	4/20/59	1	43.6	41.9	-1.7	13.1	12.5	-0.6	127	110	-17	281	184	- 97	349[a]	283	-66
182063	W.F.	4/24/59	1	43.0	42.9	-0.1	13.5	12.8	-0.7	103	107	+ 4	285	179	-106	313[a]	253	-60
182178	W.F.	4/27/59	1	43.5	41.9	-1.6	13.2	12.7	-0.5	126	110	-16	289[a]	184	-105	363[a]	293	-70
182179	W.F.	4/30/59	1	42.7	42.0	-0.7	12.7	12.8	+0.1	112	106	- 6	288	234	- 54	331[a]	306	-25
Current Mill Average:				43.2	42.2	-1.0	13.0	12.8	-0.2	119	111	- 8	281	205	- 76	340	288	-52

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXXIV

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182025	WF1S	4/24/59	1	42.1	42.2	+0.1	12.3	12.3	0.0	109	109	0	283	335	+52	362[a]	411	+49
182142	WF1S	5/ 5/59	1	42.8	42.5	-0.3	12.3	12.1	-0.2	106	106	0	312	340	+28	367[a]	411	+44
182174	WF1S	5/10/59	1	42.4	42.4	0.0	12.5	12.3	-0.2	106	109	+3	292	335	+43	357[a]	404	+47
Current Mill Average:				42.4	42.4	0.0	12.4	12.2	-0.2	107	108	+1	296	336	+40	362	409	+47

TABLE XXXV

MILL K -- 42-LB. LINERBOARD

182120	W.F.	4/21/59	2	43.6	43.3	-0.3	11.8	11.8	0.0	126	116	-10	337	277	-60	393[a]	380	-13
182121	W.F.	4/21/59	2	43.6	43.3	-0.3	11.8	11.7	-0.1	124	116	- 8	342	299	-43	374[a]	387	+13
182122	W.F.	4/21/59	2	43.1	43.0	-0.1	11.9	11.9	0.0	122	115	- 7	325	283	-42	367[a]	348	-19
182123	W.F.	4/16/59	2	43.3	43.0	-0.3	12.0	11.9	-0.1	121	114	- 7	322	263	-59	364[a]	343	-21
182124	W.F.	4/21/59	2	43.9	43.4	-0.5	11.8	11.8	0.0	124	115	- 9	334	273	-61	394[a]	342	-52
182139	W.F.	5/ 7/59	2	42.6	42.8	+0.2	11.7	11.6	-0.1	117	111	- 6	307	276	-31	369[a]	362	- 7
182140	W.F.	5/ 7/59	2	42.4	42.8	+0.4	11.6	11.7	+0.1	119	110	- 9	306	269	-37	366[a]	352	-14
182141	W.F.	5/ 7/59	2	42.6	42.7	+0.1	11.6	11.5	-0.1	115	110	- 5	322	275	-47	359[a]	333	-26
Current Mill Average:				43.1	43.0	-0.1	11.8	11.7	-0.1	121	113	- 8	324	277	-47	373	356	-17

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182089	W.F.	4/30/59	1	44.2	43.4	-0.8	12.0	11.8	-0.2	122	115	-7	326[a]	364	+38	379[a]	417	+38
182090	W.F.	4/30/59	1	43.9	43.5	-0.4	12.0	11.7	-0.3	116	116	0	323[a]	370	+47	371[a]	413	+42
182171	W.F.	5/10/59	2	44.3	44.4	+0.1	12.5	12.0	-0.5	120	116	-4	344[a]	364	+20	375[a]	396	+21
182188	W.F.	5/18/59	2	43.8	43.8	0.0	11.7	11.7	0.0	117	112	-5	352[a]	326	-26	371[a]	396	+25
Current Mill Average:				44.1	43.8	-0.3	12.1	11.8	-0.3	119	115	-4	336	356	+20	374	405	+31

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

182034	W.F.	4/19/59	-	44.2	43.8	-0.4	12.4	12.2	-0.2	111	112	+1	359[a]	322	-37	377[a]	357	-20
182035	W.F.	4/21/59	-	43.6	43.0	-0.6	12.5	12.1	-0.4	111	109	-2	358[a]	320	-38	371[a]	345	-26
182168	W.F.	5/ 3/59	-	43.5	43.0	-0.5	12.1	11.8	-0.3	113	108	-5	347	347	0	367	355	-12
182169	W.F.	5/ 3/59	-	43.6	43.2	-0.4	12.1	12.2	+0.1	112	108	-4	358[a]	344	-14	395[a]	356	-39
Current Mill Average:				43.7	43.3	-0.4	12.3	12.1	-0.2	112	109	-3	356	333	-23	377	353	-24

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXXVIII

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182019	W.F.	3/31/59	2	42.3	42.8	+0.5	12.1	12.0	-0.1	117	116	-1	343	337	- 6	382[a]	404	+22
182024	W.F.	4/10/59	2	42.2	42.8	+0.6	12.0	11.9	-0.1	119	117	-2	327[a]	344	+17	378[a]	385	+ 7
182031	W.F.	4/14/59	2	43.1	42.8	-0.3	12.5	12.2	-0.3	113	113	0	323	330	+ 7	374[a]	391	+17
182032	W.F.	4/21/59	2	43.2	42.8	-0.4	12.9	12.6	-0.3	113	111	-2	341	341	0	367[a]	388	+21
182087	W.F.	4/29/59	2	43.2	43.3	+0.1	12.4	12.2	-0.2	118	114	-4	327[a]	333	+ 6	373[a]	386	+13
182088	W.F.	4/30/59	2	43.5	43.6	+0.1	12.6	12.2	-0.4	116	114	-2	339[a]	343	+ 4	375[a]	392	+17
182118	W.F.	5/ 3/59	2	42.5	42.7	+0.2	12.3	12.0	-0.3	112	115	+3	327[a]	341	+14	356[a]	396	+40
182119	W.F.	5/ 4/59	2	42.8	43.1	+0.3	12.3	12.0	-0.3	114	114	0	315[a]	343	+28	369[a]	400	+31
182172	W.F.	5/10/59	2	42.7	42.8	+0.1	12.6	12.5	-0.1	110	111	+1	338	335	- 3	380[a]	384	+ 4
182173	W.F.	5/11/59	2	42.6	42.8	+0.2	12.5	12.6	+0.1	112	111	-1	335[a]	344	+ 9	366[a]	379	+13
Current Mill Average:				42.8	42.9	+0.1	12.4	12.2	-0.2	114	114	0	332	339	+ 7	372	391	+19

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XXXIX

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182033	W.F.	3/25/59	1	43.9	44.0	+0.1	12.3	12.0	-0.3	103	108	+5	305[a]	320	+15	343[a]	372	+29
182132	W.F.	4/10/59	1	43.9	44.1	+0.2	12.4	12.0	-0.4	105	108	+3	318	321	+ 3	356[a]	389	+33
Current Mill Average:				43.9	44.0	+0.1	12.4	12.0	-0.4	104	108	+4	312	321	+ 9	349	380	+31

TABLE XL

MILL P -- 42-LB. LINERBOARD

182148	W.F.	4/ 3/59	1	43.3	42.9	-0.4	12.9	12.6	-0.3	102	106	+4	301	277	-24	341[a]	349	+ 8
182149	W.F.	4/ 6/59	1	43.0	42.0	-1.0	13.0	12.4	-0.6	106	107	+1	309	266	-43	347[a]	353	+ 6
182150	W.F.	4/22/59	1	43.2	42.4	-0.8	13.0	12.5	-0.5	107	113	+6	297	274	-23	340[a]	324	-16
182151	W.F.	4/22/59	1	43.8	43.3	-0.5	13.0	12.6	-0.4	112	113	+1	305	293	-12	385[a]	354	-31
182152	W.F.	4/24/59	1	43.2	42.9	-0.3	12.8	12.5	-0.3	110	114	+4	299	283	-16	354[a]	352	- 2
182153	W.F.	4/24/59	1	43.8	43.3	-0.5	13.0	12.7	-0.3	110	113	+3	303	292	-11	359[a]	375	+16
182154	W.F.	4/26/59	1	43.1	42.5	-0.6	12.6	12.3	-0.3	111	114	+3	300	311	+11	383[a]	370	-13
182155	W.F.	4/26/59	1	43.7	43.1	-0.6	12.8	12.4	-0.4	112	114	+2	301	279	-22	359[a]	382	+23
Current Mill Average:				43.4	42.8	-0.6	12.9	12.5	-0.4	109	112	+3	302	284	-18	359	357	- 2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XLI

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
181954	W.F.	4/22/59	-	43.9	43.1	-0.8	12.8	12.2	-0.6	107	110	+3	334[a]	299	-35	362[a]	341	-21
181955	W.F.	4/23/59	-	44.1	43.5	-0.6	12.1	12.0	-0.1	113	116	+3	307[a]	299	- 8	367[a]	353	-14
181956	W.F.	4/24/59	-	43.7	43.2	-0.5	12.1	12.0	-0.1	109	114	+5	317[a]	307	-10	367[a]	360	- 7
182156	W.F.	5/ 6/59	-	43.4	43.1	-0.3	12.2	12.2	0.0	111	112	+1	315	297	-18	353[a]	317	-36
182157	W.F.	5/ 7/59	-	42.5	42.2	-0.3	11.8	11.8	0.0	111	112	+1	321[a]	275	-46	359[a]	340	-19
182158	W.F.	5/ 8/59	-	42.8	42.1	-0.7	11.8	11.7	-0.1	110	110	0	300[a]	279	-21	326[a]	313	-13
182159	W.F.	5/13/59	-	43.0	42.1	-0.9	12.0	12.1	+0.1	115	111	-4	308[a]	273	-35	383[a]	331	-52
182160	W.F.	5/14/59	-	42.1	42.2	+0.1	11.9	11.7	-0.2	109	111	+2	307[a]	276	-31	351[a]	321	-30
182161	W.F.	5/15/59	-	42.6	42.4	-0.2	11.8	11.9	+0.1	100	106	+6	333[a]	323	-10	357[a]	341	-16
Current Mill Average:				43.1	42.7	-0.4	12.0	12.0	0.0	109	112	+3	316	292	-24	358	335	-23

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XLII

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182026	WF1S	4/ 2/59	2	43.0	43.9	+0.9	13.9	13.3	-0.6	110	102	-8	335[a]	332	- 3	353[a]	409	+56
182027	WF1S	4/10/59	2	43.7	44.7	+1.0	14.3	14.3	0.0	110	102	-8	352[a]	350	- 2	375[a]	424	+49
182028	WF1S	4/16/59	2	43.7	44.2	+0.5	13.5	13.0	-0.5	114	107	-7	339[a]	342	+ 3	353[a]	379	+26
182029	WF1S	4/21/59	2	42.8	43.9	+1.1	13.7	13.5	-0.2	113	108	-5	323	347	+24	354[a]	355	+ 1
182030	WF1S	4/27/59	2	42.6	43.9	+1.3	13.4	13.2	-0.2	120	114	-6	317[a]	314	- 3	354[a]	388	+34
182091	WF1S	4/18/59	2	42.6	43.0	+0.4	13.9	13.5	-0.4	107	103	-4	337[a]	332	- 5	359[a]	374	+15
182092	WF1S	4/28/59	2	42.8	43.6	+0.8	13.2	12.8	-0.4	109	109	0	317[a]	336	+19	352[a]	372	+20
182093	----	4/29/59	2	42.0	42.2	+0.2	13.7	13.8	+0.1	103	101	-2	307[a]	281	-26	324[a]	348	+24
Current Mill Average:				42.9	43.7	+0.8	13.7	13.4	-0.3	111	106	-5	328	329	+ 1	353	381	+28

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--MAY 1 THROUGH MAY 31, 1959 (continued)

TABLE XLIII

MILL T -- 42-LB. LINERBOARD

File No.	Finish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
182020	W.B.	4/ 2/59	-	44.0	43.9	-0.1	11.8	11.7	-0.1	116	111	- 5	361	363	+ 2	428[a]	443	+15
182021	W.B.	4/ 4/59	-	43.8	43.8	0.0	12.0	11.8	-0.2	115	111	- 4	355	349	- 6	397[a]	432	+35
182022	W.B.	4/ 4/59	-	44.2	44.3	+0.1	12.0	11.8	-0.2	115	111	- 4	357[a]	379	+22	429[a]	444	+15
182023	W.B.	4/ 6/59	-	42.7	42.9	+0.2	11.5	11.5	0.0	113	113	0	350	364	+14	406[a]	445	+39
182134	W.B.	4/11/59	-	42.6	43.0	+0.4	11.7	11.3	-0.4	111	115	+ 4	347	383	+36	400[a]	433	+33
182135	W.B.	4/10/59	-	43.4	43.6	+0.2	11.4	11.1	-0.3	115	118	+ 3	351[a]	379	+28	409[a]	425	+16
182136	W.B.	4/16/59	-	43.5	43.1	-0.4	11.7	11.4	-0.3	116	125	+ 9	340	355	+15	405[a]	436	+31
182137	W.B.	4/13/59	-	44.0	44.0	0.0	11.7	11.4	-0.3	111	119	+ 8	337	363	+26	400[a]	420	+20
182138	W.B.	4/19/59	-	43.6	43.3	+0.2	12.2	11.9	-0.3	111	115	+ 4	343	375	+32	407[a]	461	+54
182145	W.B.	4/20/59	-	43.9	43.7	-0.2	12.0	11.8	-0.2	112	119	+ 7	357	380	+23	416[a]	464	+48
182146	W.B.	4/23/59	-	43.8	44.2	+0.4	11.6	11.4	-0.2	111	114	+ 3	346	372	+26	406[a]	425	-19
182147	W.B.	4/26/59	-	43.5	43.5	0.0	11.6	11.4	-0.2	113	111	- 2	355	404	+49	405[a]	455	+50
Current Mill Average:				43.6	43.6	0.0	11.8	11.5	-0.3	113	115	+ 2	350	372	+22	409	440	+31

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

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